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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,458	07/31/2000	Phillip C. Keslin	15-4-1034.00	5371

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EXAMINER
CUNNINGHAM, GREGORY F

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 10/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PRG

PRS

Office Action Summary	Application No.	Applicant(s)	
	09/629,458	KESLIN, PHILLIP C.	
	Examiner	Art Unit	
	Greg Cunningham	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6-21* is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☒ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 July 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This action is responsive to communications of application filed 7/31/2000.

2. The group art unit of the examiner handling your case is currently 2672. Please be sure to use the most current art unit number on all correspondence to help us route your case and respond to you in a timely fashion.

3. The disposition of the claims is as follows: claims 1-21 are pending in the application. Claims 1, 6, and 15 are independent claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koga et al. (U.S. Patent Number 5,819,077), hereafter Koga.

A. Per claim 1, "A system for providing a client with access to remote graphics rendering resources, comprising: a remote rendering control system that receives graphics instructions, generates modified graphics instructions on the basis of said graphics instructions, and outputs said modified graphics instructions to said graphics rendering resources" is disclosed in col. 2, lns. 12-40 at "(10) It is therefore an objective of the present invention to provide a graphics

system based on the graphics client server model having a graphics structure mechanism that prevents a performance degradation from occurring in the above-mentioned local case.

(11) The above-mentioned objective is achieved by providing a constitution in which an application program accesses a routine for directly performing graphics processing without invoking a communication process in the local case, in addition to the previous routine for a remote case, and controlling graphics resources with a communication process.

(12) In addition to above mentioned constitution, there is provided a graphics drawing method for holding a graphics resource (structure, graphics context and so on) at one place. And, at the beginning of graphics command function processing in a local case, determining whether a graphics command function is the function of editing the graphics resource. If it is, a routine for the remote case and for controlling a graphics resource with a communication process is accessed. If not (called an output command), a routine for directly performing graphics processing without a communication process is accessed.

(13) The graphics context as referred to herein indicates a set of attributes, including attributes of graphics to be drawn and environmental attributes for graphics processing. The graphics attributes are a color in which a drawing is made and a draw area, for example. The graphics context is hereinafter referred to also as GC."

and in col. 3, ln. 46 – col. 4, ln. 16 at "(7) On the other hand, the remote access processing library 150, having received the drawing command from the lower graphics library 130, interprets the communications protocol coming through the communication processing path 11 and, if it is a setting or editing command for a structure or graphics context, sends it to a structure & GC control library 160. The structure & GC control library 160 holds and controls

the structure and several graphics contexts. When updating a current graphics context or redrawing the structure, the structure & GC control library 160 calls a corresponding function from the geometry processing library 140.

(8) The current GC table 1801 holds the values of a graphics environment to be referenced when performing graphics geometry processing. For example, this table contains data identifying colors of graphics to be drawn, conversion matrix coefficients necessary for coordinate conversion, and drawing areas. One application has only one current GC table. However, in a multi-process environment in which a plurality of applications concurrently operate on time sharing basis there are a plurality of current GC tables (1801, 1802 and 1803) for these applications.

(9) The geometry processing library 140 can deal with the multi-process environment by switching the current GC tables (1801, 1802 and 1803) by dynamic link. When a process switching occurs, an interrupt signal is issued to a graphics driver. The graphics driver 170 switches the attributes of the graphics rendering processor 104 and the current GC table 1801 to another current GC table 1802.

(10) The application 110, the lower graphics library 130 and the geometry processing library 140, when passing along the path 13, perform processing data by calling functions in each layer, so that the processing is performed in the same process. On the other hand, when they send data along the path 11, the application 110 and the lower graphics library 130 share same process, while the remote access processing library 150, the structure & GC control library 160 and the geometry processing library 140 operate in another process."

and col. 4, lns. 30-49 at "(16) Now, data processing in the remote case will be outlined as follows.

(17) Referring to FIG. 1, an application 120 generates a graphics command in the machine 20 to be transferred to a lower graphics library 230. Since a drawing area is not in its own machine 20, the lower graphics library 230 transfers the graphics command as a communications protocol to the machine 10 via the path 12 through communication processing.

(18) In the machine 10, the remote access processing library 150 receives the communications protocol coming from the machine 20.

(19) The remote access processing library 150 interprets the communications protocol received through communication processing; and, if it is a setting or editing command for a structure or graphics context, it calls a corresponding function from the structure & GC control library 160. If it is a drawing command, the remote access processing library directly calls a function from the geometry processing library 140."

Although graphics instructions are not explicit, said instructions are inherent with drawing commands, geometry processing library, and through communication processing.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply client server based system having shared graphics resources disclosed by Koga because it would render graphics at remote locations using shared resources as revealed supra.

B. Per claim 2, "The system of claim 1, wherein said remote rendering control system comprises transparent interface to ... rendering session" is disclosed, supra for claim 1, and in col. 1, lns. 10-15 at "(2) The present invention relates to a computer graphics system, such as

client server model to be realized in a network-transparent environment and, more particularly, to a graphics drawing method based on graphics standardization specification PEX and an apparatus for implementing such a method."

C. Per claim 3, "The system of claim 1, wherein said remote rendering control system comprises a data compression module that compresses said image data prior to sending said image data to said client" is disclosed, supra for claim 1, and in col. 5, ln. 63 – col. 6, ln. 3 at "(36) The CPEX 1042 is a processor for compressing and expanding image data; that is, this CPEX 1042 compresses the image data stored in the FM 1044 to send the compressed image data to the external bus and expands compressed image data coming from the external bus into the frame memory. The CPEX 1042 is hardware effective for transfer (GSendPicturewithComp function listed in Table 1 to be described) of the compressed image data over the network."

D. Per claim 4, "The system of claim 1, wherein said remote rendering control system receives image data generated by said graphics rendering resources on the basis of said modified graphics instructions, and sends said image data to said client" is disclosed, supra for claim 1, and in col. 1, lns. 16-26 at "(3) For a graphics system for use on client server model, there is an "X-Windows System" for example as introduced in the UNIX MAGAZINE, March 1988, pp 55 to 62. In the client machine an application creates graphics commands by calling some graphics functions of graphics library. Then, the client machine performs communications process on these commands to send them to the server machine as a communications protocol. The server machine receives the communications protocol, performs graphics processing accordingly, and displays a processing result on a server monitor."

E. Per claim 5, "The system of claim 1, wherein said remote rendering control system receives graphics instructions from a graphics application program" is disclosed, supra for claim 1, and in col. 1, lns. 27-40 at "(4) Known as one of three dimension graphics standardization specifications is a "PEX Introduction and Overview Version 3.2" by MIT Laboratory for Computer Science, October 1988. In this PEX specification, an application holds graphics commands for drawing in a structure hierarchically. In drawing, the structure is traversed to create the graphics commands. The structure is held in either client machine (application) or server machine. It is better to hold the structure in server, in order to share resource structure between some application. PEX standard defined three subsets of PEX features, immediate mode, structure mode and PHIGS Workstation mode. Application program in the all mode (includes immediate mode) can execute some existing structures."

Allowable Subject Matter

6. Claims 6-21 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

While the closest related prior art, Koga, is inherently sufficient in detail for disclosing claims 1-5, (i.e. a remote rendering control system that receives graphics instructions, generates modified graphics instructions on the basis of said graphics instructions, and outputs said modified graphics instructions to said graphics rendering resources; remote rendering control system comprises transparent interface to ... rendering session; remote rendering control system comprises a data compression module that compresses said image data prior to sending said image data to said client; remote rendering control system receives image data generated by said graphics rendering resources on the basis of said modified graphics instructions, and sends said

image data to said client; and remote rendering control system receives graphics instructions from a graphics application program), Koga lacks the nine (9) itemized steps of remote graphics rendering on behalf of a client detailed in independent claims 6 and 15. Claims 7-14 and 16-21 depend from allowable independent claims 6 and 15 and are therefore allowed.

Responses

7. Responses to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231. If applicant desires to fax a response, (703) 308-9051 may be used for formal communications or (703) 308-6606 for informal or draft communications.

Please label "PROPOSED" or "DRAFT" for informal facsimile communications. Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Inquiries

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Cunningham whose telephone number is (703) 308-6109.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi, can be reached on (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

J.F. Cunningham

gfc

September 26, 2002

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600